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UNITED STATES GOVERNMENT

Memorandum

E72-10034
CR-127899

TO : Edward Crump, Technical Monitor, Goddard Space Flight Center, Green Belt, Maryland 20771

DATE: July 17, 1972

FROM : Peter Barnes and Erk Reimnitz

Pete Barnes

SUBJECT: Bimonthly report - Studies of inner shelf and coastal sedimentation environment of the Beaufort Sea from ERTS-A

Field studies of the initiation of river flow onto the frozen Arctic Ocean were made by a group of 4 scientists from May 15 to June 10, 1972. A time lapse camera mounted on a 40' tower near the mouth of the Kuparuk River, west of Prudhoe Bay, provided a detailed 10-day record (24 hours a day) of flow direction and water level. It is believed that wind build-up, discharge variance of the river and through ice drainage rates are the prime factors influencing overflow onto the sea ice.

Current meter, transmissometer, temperature, salinity and thermoprobe data were collected from holes drilled in the shorefast ice, from seal holes and from the river water overflow. Depth and areal distribution of the overflow water were monitored from the ice using snowmobiles, and from the air using a chartered helicopter and fixed wing aircraft from the Arctic Research Laboratory, Point Barrow. Photographic records were made on 35 mm KII, KX, Ektachrome IR, Plus X, and IR black and white film. A simple two camera frame permitted simultaneous exposures of two types of film. Preliminary comparisons of the IR and conventional films, both color and black and white, showed no advantage to using the infrared film. However, the low altitude photography taken during this study will be very helpful in the interpretation of ERTS-A imagery.

Prior to leaving the study area, the time lapse camera was moved to a barrier island two miles seaward from the river mouth. Here we hope to obtain a record of the sea ice break-up offshore and to monitor ice push and gouge features on the barrier island beach. Arctic summer lighting conditions allow us to photograph 24 hours per day. The camera is being maintained by U.S. Fish and Wildlife scientists studying water fowl on the barrier island.

Copies of aerial photographs taken of the nearshore zone between Point Barrow and Barter Island in April 1972 as part of the AIDJEX study were requested from Bill Campbell (USGS, WRD, Tacoma). He assured us that copies will be available at the end of the field season. Bill Van Tries (U.S. Sport Fisheries and Wildlife) agreed to extend offshore coverage of aerial photography, being flown with an I^2S multilens camera.

cc: EROS Office, Wash., D.C.

(E72-10034) STUDIES OF INNER SHELF AND COASTAL SEDIMENTATION ENVIRONMENT OF THE BEAUFORT SEA FROM ERTS-A Bimonthly Report
E. Reimnitz, et al (Geological Survey)
17 Jul. 1972 1 p

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